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VOLUME XVII.

NUMBER 3

# THE AGRICULTURAL STUDENT

A MONTHLY MAGAZINE DEVOTED TO AGRICULTURAL EDUCATION

DAIRY NUMBER



*Honor Bright, Ohto's Largest Producer*

NOVEMBER, 1910

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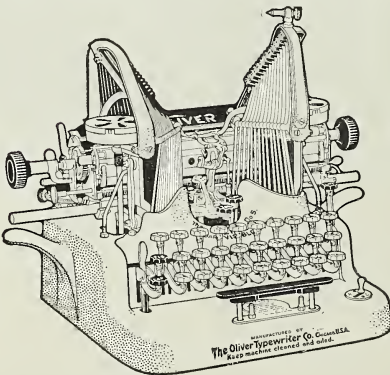
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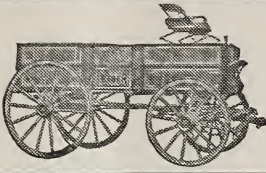
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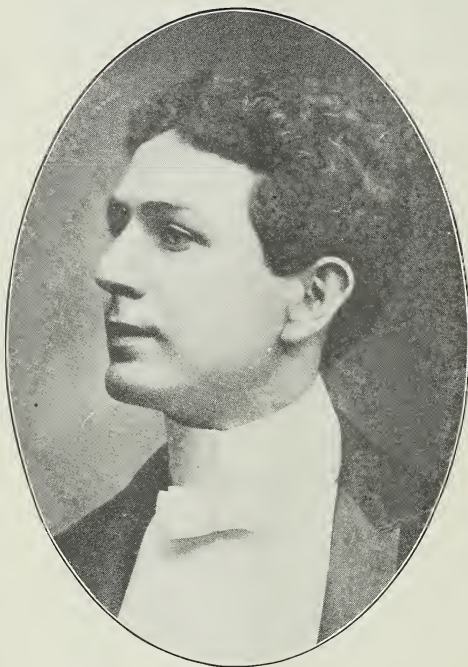
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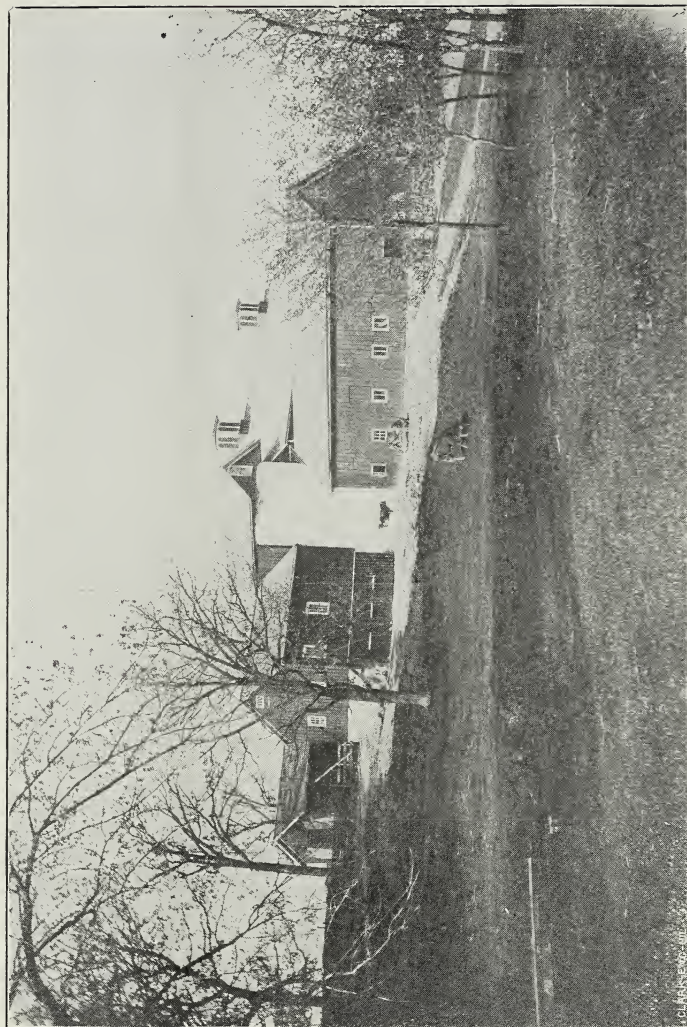
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The Pfeifer Show Print Co., Columbus, O.



**Home of Rosendale Guernsey Herd, Rosendale, Wisconsin.**

# THE AGRICULTURAL STUDENT

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## The Value of Dairy Farming

By Oscar Erf, Professor of Dairying

There are three types of agriculture: Grain farming, grain and livestock farming and dairy farming. Dairy farming in American agriculture is fast becoming a necessary adjunct because of its usefulness in retaining, restoring, and in most cases increasing the fertility of the soil, making the productive value as well as the money value of the farm greater every year. With the growing demand for the products of the farm, those who follow agricultural pursuits are guaranteed prosperity just so long as farm lands remain productive. It is not only necessary to preserve the fertility but it must be increased for the time is coming when every acre of land under cultivation must yield much more heavily in order to furnish food and clothing for the rapidly growing population.

Every year the acres that provide for the dairy cow are growing richer while those that are devoted to exclusive grain farming are growing poorer and becoming less productive. The reason is not hard to discover, for it is a fact that with every ton of wheat that a man sells from his farm he is bound to lose some fertility. According to analyses in most instances his loss in fertility amounts to \$8.60 for every ton sold. For every ton of corn that is sold approximately \$6.50 worth of fertility is lost. Should these feeds be con-

verted into dairy products such as cream or butter, for every ton of butter sold (which is usually worth from eight to ten times as much as the wheat) but 36c worth of fertility is removed from the farm. If the commercial value of a ton of wheat be estimated at 75c per bushel and the commercial value of a ton of butter be estimated at 25c per pound, then for every hundred dollars worth of wheat that is sold \$34.50 worth of fertility is removed from the soil; while with each hundred dollars worth of butter that is sold only 7c worth of fertility is removed.

In many of the Atlantic States even at the present time there are farms that have been abandoned because of their unproductiveness. These lands are being reclaimed and by the use of the dairy cow are being made more productive than they were in their original state.

The grains and other products grown upon the farm find a sure and profitable market in the dairy cow. That she is the most economical and profitable producer of human foods of all farm animals is evidenced by the facts learned through many experiments. It has been shown that a cow yielding ten quarts of 4 per cent. milk daily produces as much fat and fat equivalent in seven days as would the steer that is gaining 15 pounds in the same time. In



addition to this the cow yields six times as much mineral matter and six times as much nitrogenous matter, which are the nutrients which render skim milk so valuable for feeding all young animals. The dairy cow accomplishes this by consuming the roughage or cheap food with a small amount of concentrated or expensive food, while her brother, the steer, requires concentrated, expensive food largely, in order to make his gains.

One great advantage of dairy farming lies in the fact that the farmer's capital is invested for such a short time. Once a month, once a week or every day he may have a check for the work his cows have done the month, the week or the day before, and a more certain source of profit is provided for the reason that the market for dairy products does not fluctuate in the uncertain manner that the markets for the other farm products do. Just so long as the farmer milks good cows he is able to put money in the bank at short and regular intervals and hard times and financial panics have very little effect upon him.

There is a vast difference between the profits yielded by the common cow and the cow whose ancestors have been bred for economical production for hundreds of years. There is no disputing the fact that the profitable dairy cow is a source of large, regular and sure profits, and a conserver and restorer of fertility, but do you know the difference between profitable and unprofitable dairying? Here it is, in a nutshell. A cow eats a certain amount of the proper food and produces a certain amount of milk. Some cows are capable of producing more milk from a given quantity of feed than others. In fact, some cows produce ten times more milk than others and milk of nearly the same degree of richness. A cow consuming the

same amount of food that the average dairy cow consumes and producing 350 gallons of milk per year, produces it at a cost of 23c per gallon; a cow producing 470 gallons of milk per year produces it at a cost of 20.5c per gallon; a cow producing 590 gallons per year produces it at a cost of 18c per gallon; a cow producing 710 gallons per year produces it at a cost of 14.5c per gallon; a cow producing 830 gallons per year produces it at a cost of 12c per gallon; and a cow that gives 950 gallons of milk in one year produces it for 9.5c per gallon. And so we might go on until we reach the production of Colantha 4th's Johanna, who in one year produced 3,190 gallons of milk. If fed the same ration as the average cow she would have produced this prodigious amount for 2.7c per gallon. However, this does not hold true beyond a production of 900 or 1000 gallons for the reasons that animals producing such large amounts require an extra amount of feed and care.

There is as much difference in the individuality of cows and their powers to produce milk as there is in men and their powers to perform certain kinds of work. Man is adapted to perform many different kinds of work, but he can perform only a few kinds with great proficiency; so cows are adapted to perform but a few kinds of work. One cow consumes corn silage, clover and alfalfa hay, oats, bran, etc., and by a peculiar, intricate mechanism converts this rough food into palatable material—into large quantities of the food product known as milk, and she does this at a profit. Another cow takes this same food and converts it into soft, juicy, muscular texture, which after the animal is killed, furnishes the steaks and roasts which we all relish so much. Then there is a third cow that takes

this same ration and converts it neither into much milk nor into much meat. The first two cows are profitable cows, but the third cow is unprofitable. Unfortunately too many farmers persist in keeping the third cow and that is just where the difference between successful and unsuccessful dairying lies.

Success lies not in the number of cows that a man keeps, but rather in the kind of cows that he keeps. It is

the year. In addition to this he was obliged to pay  $1\frac{1}{2}c$  per gallon freight, which left him  $12c$  per gallon for his milk. Now it is plain to be seen that on each gallon of milk he lost  $13c$ ; consequently at the end of the year he had lost \$910. The other three cows produced 2,400 gallons of milk and the actual cost to keep them was \$240. Every gallon of milk that these cows produced cost just  $10c$ . It was sold for  $12c$ . Thus



Getty's Peach, 173348, Largest Producer of the Hartman Herd.

more profitable to keep a small number of good cows than a large number of average cows. The following may be cited as an example: A farmer had 23 cows which he had been keeping for a number of years. He finally realized that he was not making as much money as he should and began to keep records. As a result he found that 20 of these cows produced 7,000 gallons of milk in one year and it cost him \$1,760 to feed and care for them during that time. It cost him  $25c$  to produce each gallon of milk and he received for it an average price of  $13\frac{1}{2}c$  per gallon for

there was a profit of  $2c$  per gallon or \$48 on the total amount produced by the three cows. This is not a very large income from a cow, but it shows such a difference between the returns from the three cows and the returns from the twenty cows that it makes a good example.

Now to weed out the poor cows—the star boarders, is a simple matter that lies within the power of every dairyman. A little clerical work is the essential, and while this does not appeal to the average farmer it must necessarily be done in order to make a success

of the business. The milk from each individual cow should be weighed every night and morning, the weight placed upon the milk sheet and followed by the approximate amount of feed given to the cow. At the end of the year the difference in money value of the feed given the cow and the milk produced will give the profit or loss. The difference between the cost of feed and labor and the value of the milk is the profit

or loss. The value of the calf and the manure will compensate for all other expenses. This work has been sadly neglected in the past because it embraces a little extra effort on the part of the producer and since it is a characteristic trait of the average farmer to neglect such work a new scheme has been adopted by which this may be overcome—every dairy farmer should become a member of a cow testing association.

## Milk Contamination

By O. C. Cunningham, Assistant in Dairying

If all of the milk produced was consumed on the farm within a few hours after its production the subject of milk contamination would be of comparatively little importance. However, this is far from being the case. The thousands of children in our large cities must depend for sustenance on milk shipped sometimes for long distances and which is often 12 to 36 hours old before it reaches them. This renders imperative the necessity of keeping the milk as pure as possible. Not only is it necessary that the city milk supply be pure, but the milk condenseries and cheese and butter factories must have clean milk if they are to produce good products.

The things that contaminate milk are what we ordinarily speak of as dirt and bacteria or germs.

The dirt which gets into milk consists chiefly of hairs, dandruff, particles of manure, bits of food, straw, earth and dust. The process of straining ordinarily practiced removes the larger and more solid particles of the above, but a great portion of it which has been dissolved or is too fine to be caught by the meshes of the strainer passes through

and can never be removed. In fact, unless straining is carefully done and the strainer changed or cleaned frequently it serves to break up and render soluble many of the larger particles of dirt that it catches. The way to have milk clean, therefore, is to keep the dirt out in the first place.

Milk is a human food. It is a liquid produced from an animal, also in the home of an animal, which renders it very easily contaminated. It would seem that, if those producing milk could be brought to think of these two facts at the same time and to look on dirt in milk as they do on dirt in other foods, it would be far easier than it is to secure a clean milk supply. That they do not do this may be shown by a homely illustration. A dairyman who produces unclean milk would object strenuously to being served every noon with a bowl of soup into which the cook habitually allowed a few hairs and perhaps a little dandruff to fall. But that same dairyman will every day strain out of his milk cow hairs, bits of cow dung, cow dandruff and numerous other varieties of dirt and then place that same milk on the table for his children to drink or bottle it and



send it into the city for his customers to give to their babies. The difference is in the point of view. He is accustomed to the dirt in the milk and takes it as a matter of course.

While dirt in milk is repulsive, its chief importance comes from the fact that the presence of dirt means the presence of large number of bacteria. These are far more harmful to the milk and to the persons consuming it than the dirt itself. In fact the latter would

much greater when the milk is to be consumed in the city than when consumed on the farm a few hours after production.

Dirt and bacteria always go together, so that the avenues of contamination and the means of preventing contamination are the same with one as with the other.

The first source of bacterial contamination is from the udder itself. The teats and milk ducts always contain bac-



Where Clean Milk Cannot Be Produced.

usually be harmless apart from the germs it carries. Bacteria are minute, single celled plants that are everywhere abundant. They abound especially in filth, while cleanliness means comparative freedom from them. They require a large per cent. of moisture for growth and must have their food in solution, so that they find in milk an ideal home for multiplying. As the milk grows older the germs are rapidly increasing in number. This is the reason for the statement in the beginning, that the comparative importance of pure milk is

teria, so that while milk is probably sterile when it is secreted, it is never so when it leaves the udder. Most of these are in the teats and lower ducts, so that discarding the first few streams removes a large portion of them. If the udder is tubercular or inflamed from any cause it is evident that harmful germs will be present and the milk will be contaminated by them.

Most of the germs in milk come from outside sources. The cow herself is a prolific source of dirt and germs. The coating of manure and other material

which is often allowed to accumulate on a cow's flanks and udder causes showers of germs to fall every time the milker brushes against her, agitates the udder, or the cow moves. Manifestly the way to prevent this is to keep the stable and the cow clean. Moistening the flanks and udder before milking also helps greatly because dust and bacteria will cling to a moist surface. Clipping the flanks and udder help to prevent loose hairs from falling into the

the dusty air of a building contains countless numbers. Therefore anything which keeps down the dust prevents contamination. The feeding of dusty feeds, such as hay, just before milking, and the use of dusty bedding are very undesirable. The dairyman will get better returns from grooming his cows than his horses, but it should not be done just before milking.

Filling the bottling or milk room with steam before handling the milk and



Producing Clean Milk.

milk and carrying with them innumerable germs. No self-respecting dairyman should be without some form of covered milk pail which will keep most of the dirt from falling into the milk, instead of catching all of it as a flaring top pail will do.

Dusty air in the stable or other places where milk is handled is a fruitful source of contamination. Bacteria do not fly free in the air to any great extent, but ride upon dust particles. Fresh outdoor air contains few germs, while

keeping the floor damp will work wonders in washing the germs from the air and keeping down the dust.

The vessels in which milk is handled are often the greatest sources of contamination. Unless all of the vessels and bottles are clean and sterile, each one will add its quota of bacteria as the milk proceeds on its journey from the cow to the bottles. Even when vessels are washed clean and rinsed in hot water a large number of germs will remain in them from one time of use to

the next, and when any milk is left in the seams and crevices the number in them will be enormous. Boiling of vessels or exposing them over a steam jet greatly reduces the number of germs, but contamination is completely prevented only by exposing to steam under pressure. Cloth strainers unless boiled or steamed every day and carefully cared for between times are a great source of contamination.

The contamination from milk bottles is dangerous, unless they are properly sterilized, because they may carry disease germs from a family where a contagious disease exists.

A foul water supply, either when cows are allowed to drink it or it is

used in washing utensils, may be a serious source of contamination.

Although he does not usually add as many germs as other sources, the person who does the milking and handles the milk in the various stages of preparation for market often greatly contaminates it. The milker on the average farm milks, strains and cools the milk without washing his hands or changing his clothing in which he has been doing all kinds of dirty work. When he does this he cannot help adding his share of contamination. What is more serious is the fact that he may often add disease germs, if he is suffering from a contagious disease or comes in contact with any one else who is.

## Ayrshire Records

The report of the official test for Ayrshires in the Home Dairy Test for 1909-10 gives an average of 9593 lbs. of milk and 434 lbs. of butter for the 30 cows comprising the six best herds in the test.

The six best cows in the test averaged 11,712 lbs. of milk and 531 lbs. of butter.

One cow gave 12,218 lbs. of milk and 537 lbs. of butter.

Another cow gave 11,784 lbs. of milk and 566 lbs. of butter.

While the above records may not be phenomenal, they are of value in showing the working ability of the Ayrshire cow, and her uniformity of production in the working dairy.

They are of value, too, as showing full year work in the production of milk and butter for sale.

The test, too, is of value as showing the high average of the poorest cows compared with the yield of the best.

The lowest yield in the whole thirty cows was one cow who gave 7512 lbs. of milk and 337 lbs. of butter.

The value of the breed for a working dairy is shown in the general average of the large number of cows, more than in an occasional cow of phenomenal ability.

Another thing of interest in the Home Dairy Test is that it is made on the farms in different localities.

One of the above herds is located in Maine, and another in the State of Washington, with herds scattered all along between, all of them doing good practical work in the dairy under diverse conditions.



## The Guernsey

By Secretary Guernsey Cattle Club

This breed of dairy cattle has made a remarkable growth in public favor. This last year has shown a gain of over 80 per cent. over the previous year. The greatest number of entries and transfers ever recorded were placed upon the Club records last year.

One reason for this remarkable growth is that the superior color, flavor and richness of the milk, cream and butter from the Guernsey cow is becoming better known. This, with her record as an economical producer, returning the most for a dollar invested in food, has made her a great favorite in the progressive dairy where a high class of dairy products for a critical trade is demanded.

It is her high grade of dairy products, her size and vigor, that has made her so desirable for the private estate dairy.

Wherever her rich, natural golden colored products are shown they are sure to win recognition. At the Pan-American Dairy Breed Test, the only one where all dairy breeds competed, the Guernsey was awarded first prize in the six months' contest for the following:

The greatest net profit in production of butter fat.

The greatest net profit in production of butter.

The least cost per pound of butter produced.

The greatest return for \$1.00 invested in food for the production of butter.

The highest average score on flavor of butter produced.

The highest average score on natural color of butter produced.

The highest average score on all points of butter produced.

This bears out the position the breed took on these points in the trials years ago at the New York and New Jersey Agricultural Experiment Stations.

The American Guernsey Cattle Club were the first to establish an advanced register on the true measure of utility of a dairy cow—namely, what she can do for one year in the production of butter fat supervised by an Agricultural Experiment Station. There are now over one thousand years records. These show an average of 7921.31 lbs. milk, 408.14 lbs. butter fat (equivalent to 450 lbs. butter) and an average per cent. of 5.09. The highest record for milk production is 18,459.80 lbs., while there are many with records of 12,000 lbs. and better.

About a year ago a competition was started in Iowa to determine the best dairy cow in the state. This has been conducted under the direction of the Agricultural College of the larger number of cows of all breeds entered in the contest. The two that have made the best records are the Guernseys—Dairy-maid of Pinehurst, whose year's record is 14,562.4 lbs. of milk, 860.26 lbs. butter fat, with an average per cent. of 5.91. The second cow is Jedetta of Pinehurst, whose record is 15,109.1 lbs. milk, 778.8 lbs. butter fat, average per cent. 5.15.

There is surely no better proof of the sterling qualities of the Guernsey than is cited above.

The Guernsey is a native of the Island of Guernsey. The group to which this island belongs, known as the Channel, or at one time called Alderney Isle, has had a most important place in the history of the civilization of the world.

Their insular position, separated as they are by those bits of silvery sea from England and the continent, dangerous of approach, well fortified, it is no wonder we find on them a sturdy race of people who take pride in conquests. Guernsey points with pride to Jersey that she was never conquered, while Jersey has never forgiven her sister for being a few miles nearer the London market.

It is to these two islands that we as breeders of dairy cattle owe much for

Portsmouth, these touched in turn at St. Helier, Jersey. St. Peter Port, Guernsey, St. Anne and Alderney, the latter being the last in their course. It was a common custom to say that they came from the last place where they touched, hence they were said to have arrived from Alderney, and the cattle they had on board were naturally called Alderney cattle, though in reality most of the stock came from Jersey, with a few from Guernsey and now and then a head or two from Alderney. Alderney has



Dolly Dimple, 19144, Adv. Reg. 628;  $3\frac{1}{2}$ -Year-Old Record 18,458.8 Pounds Milk and 906.89 Pounds Butter Fat. (Comp. Guernsey Cattle Club.)

the foundation of the two breeds of cattle so well known as producers of dairy products of the highest quality.

Right here, before taking up especially the Guernsey I wish to refer to the term which has in the past been often applied in rather a promiscuous manner to the cattle of this group—Alderneys.

Before the age of steam the chief trade of the Channel Islands with England was carried on by vessels that sailed between St. Malo, Brest and other ports on the French coast to England. On the voyages to London, Plymouth or

been a part or parish of Guernsey. The few hundred cattle on the island resemble the Guernsey and have been accepted at times in the Guernsey Island registers. Recently an attempt to start a herd register on Alderney has been made. This has been recognized by the English Guernsey Society Book, but the American Guernsey Cattle Club Register only accepts such animals as are entered in the herd register of the Royal Guernsey Agricultural Society or traces through ancestors to same.

The Island of Guernsey is 9 by 13 miles, comprising 10,000 acres, on which

there are 36,000 people, and practically all dependent on the soil and agricultural work for a living. With the exception of Alderney this island of Guernsey lies in the most exposed position, just where the waters of the Atlantic Ocean and North Sea are vieing with each other for supremacy.

Yet we find this island in the latitude of northern Newfoundland, with this exposure to wind and wave, having so much sunshine and warmth from the

Back in the darker ages when the life of the early Christian was shrouded with persecution we find on these islands evidence of refuge for those driven from the continent. These islands situated between England and Continental Europe proved an enticing abode.

With their movement naturally were taken the cattle of adjacent countries. On the near coast of France were cattle noted for their rich milk and famous



Imported Masher's Sequel, 11462, Adv. Reg. 44. (Comp. Guernsey Cattle Club.)

Gulf stream, that orange trees will grow and sometimes bloom, and the walled-in gardens of the stone cottages overflow with flowers and tropical plants. It confuses the mind to see all these beautiful plants in the open air and find that the tomato is only grown with great care under glass, and no burning heat to ripen corn. The mean temperature is as follows:

Spring Months—March, April, May, 47.7.

Summer—June, July, August, 59.9.

Fall—Sept. Oct., Nov., 53.6.

Winter—Dec., Jan., Feb., 44.2.

butter. These, the little black Britanians and the Normans, laid the foundation of the Channel breeds. Professor Lowin, writing of the island cattle in general in the early part of this century, uses the term Alderney and speaks of them as "Orange, fawn and white, with a darker shade on head and neck, with a white switch," essentially a Guernsey of the modern day.

That the cattle of the islands were much alike originally is not to be doubted.

Unquestionably the divergence came when the Jerseyman, skilled and per-



sistent in breeding, sought to give the English fancier a cow to grace the lawns of the English Estate. This he succeeded in with rich reward. The Guernseyman with his conservatism had faith in his yellow and white cow. To him,, his was the farmer's cow with her golden skin and quiet temper.

It is known as early as 1789 measures were taken against importation of stock to the islands. In 1819 more stringent

drink by the women and children. Pasture nearly the entire year, roots, hay, oil cake, and oats, little or no heating or heavy food. These conditions have contributed as a noble foundation for the enlightened dairymen of succeeding ages to build on.

In 1833, the captain of a sailing vessel that called at the island was so much impressed with the fine quality of the cattle he brought to the port of Bos-



Dairymaid of Pinehurst 24656, Adv. Reg. 843: Re-entry; 'The Winner of the Iowa State Dairy Cow Contest. Year's Record: 14,562.40 Pounds Milk, 860.26 Pounds Butter Fat.

(Comp. Guernsey Cattle Club.)

laws were enacted, and importation of live cattle, except for slaughter, prohibited.

It was then that the islands isolated themselves from the cattle kingdom and began their jealous work of improvement.

Friends, under such conditions what would you naturally think you would find the nature and nurture of the Guernsey to be?

Nothing but lessons of gentleness, milked, cared for, tethered, and led to

ton three head, bull and two heifers. These were sent to his brother on what is now known as Cow Island, in Lake Winnepesaukee, in New Hampshire. Through the carefully kept dairy and records of an elderly gentleman we were enabled to trace this importation to the custom records, and there, owing to the great Boston fire in the '70's, the record was lost.

About 1840 some of the older families around Philadelphia had Guernseys in their private dairies. These having

given such good satisfaction, the Fowlers, about 1865, brought over some for sale in that city.

While on a pleasure trip to these islands in 1872 our present President of the American Guernsey Cattle Club, Mr. James M. Codman, of Massachusetts, admired the color and character of the dairy products on the island and made an importation. This lot and their products so attracted the members of the Massachusetts Society for Promotion of Agriculture that Mr. Codman was induced to bring another lot over the next year, and these founded the herds of the Codmans, Bowdichs and Lawrences in Massachusetts.

By these some Connecticut gentlemen were induced to send a party to make selection on the island.

It soon became apparent that some means must be taken to preserve the records of the breed and so February 7, 1877, a meeting was called and the American Guernsey Cattle Club, with its Register, started with 150 animals whose pedigrees could be traced to the island.

For many years these cattle were jealously guarded on private estates, where the owners did not desire to push their herds from a breeder's standpoint. Having ample opportunity for

selling their surplus, little attempt was made for public recognition.

As the sterling qualities of the breed became more widely known, the breed has come rapidly into public favor.

Great as has been the growth of the Guernsey in popular favor and prosperous as has been her interests, there is a sense of pride and satisfaction to those who have been associated with the breed that the ground she has gained has been won by her own honest efforts as a dairy cow. She has led by measuring her efforts by the critical test of a dairy cow what she can do in the year race, not what the butter maker might do with her products in short time trials. Records based on butter fat production for extended periods of time.

Returning the greatest amount for \$1.00 invested in food, making butter fat at least cost per pound, giving dairy products of the highest natural color and flavor, giving to the private estate that milk, cream and butter pleasing in appearance and excelling in usefulness, she and her grades being almost universally the favorites in the high class dairies of our large communities, such, friends, is the proud record of the Guernsey cow's advancement, and on such she appeals for recognition and support by the public.

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## Feed and Care of the Dairy Cow

By L. P. Bailey

The dairy cow is perhaps the most regular in natural habits, and the most affected by change in her accustomed environments of all the domestic animals. Any kind, quality or quantity of feed given her without regularity in both time and quantity will fail to get the most satisfactory returns.

The successful feeder must cater to

the individual likes of each cow. She should be fed, by the same person all the time, such quality of feed as best suits her individual appetite and digestion, and in such quantity as gives the best results, judged by the amount of milk given and the healthfulness of the cow. This is to be known by watching the feed trough, choppings, condition

of her hair, brightness of the eye, and general appearance. With these observations, feed her to the limit and no more. Better underfeed than overfeed.

In the corn belt the silo is the dairyman's salvation for the main rough feed in winter and, in case of drouth or short pasture, in summer. Make silo small in diameter, great in height, and enough in capacity to feed the herd of cows for nine months in the years. In most sections of the United States we cannot depend on pasture more than two or three months in the year. Most soiling crops, requiring a rich soil and proper weather conditions with very much increased labor, makes this system more uncertain and expensive than the silage system, and no better feed, doubtful if as good.

The corn plant is the best forage yet discovered common to many sections. So easily produced, the most dependable crop raised, possessing greater food value per acre and happily the best of all plants for the silo. It can be at hand every minute in the year in its most palatable form.

In the care of the dairy cow, study her individual whims, treat her as you would your best girl, always speak to her as you do to your neighbor's wife. Give her a comfortable stable.

"Do unto the cow as though you were the cow." This is the golden rule for the dairyman. If properly observed it will bring dollars and contentment to the owner and his conservative work will be a beacon light for other men to admire.



Homeward Bound.



## The Ayrshire Cow

By Secretary C. M. Winslow

Among dairy breeds, the Ayrshire cow occupies a position by herself, in competition with no other breed in their specialty.

In color she is different, being red and white, spotted, of medium size, weighing about one thousand pounds, stylish and handsome in build, clean built, and wedge shape, with a perfect

well up to the next calving, and unless care is taken, will not go dry at all.

An average Ayrshire cow should, with fair treatment, give from 6000 to 8000 lbs. of milk in a year of an average of 4 per cent. fat.

She is a vigorous feeder, and not at all dainty in her appetite, taking coarse fodder or brouse with a relish,



Netherhall Jean 3d, 21705; Adv. Reg. 201; Second Prize at Seattle, 1909. Record: 10,920 Pounds Milk, 506 Pounds Butter. (Comp. Ayrshire Breeders' Association.)

udder, and good teats, placed on the four corners of her udder.

The chief recommendation to the dairyman is her strong vigorous constitution, her hearty appetite, and ability to do well under adverse food conditions, being a dairy rustler.

As a milker she gives a large quantity of good milk for the amount of food consumed.

In quantity, she does not give such a large daily yield to start off on, but is a very uniform milker, and holds out

and is a persistent chewer of her cud, thus getting all from the food there is in it.

You can hardly ever catch an Ayrshire cow when she is not either eating or chewing her cud.

Her milk occupies a position unequalled as a table food, being evenly balanced in fat and casein, with small fat globules, which cause the milk to remain of a uniform quality to the bottom of the dish, and never looking blue or thin.

It is an easily digested milk, and is highly recommended by physicians for infants and people with weak digestion.

While she excels as a milk cow, she is no ordinary butter cow, and with a little care in selection and breeding might place herself on a par with any of the

special butter breeds.

While the Ayrshire cow is an economical producer on short rations, she also responds to better food supply, and with extra care has made records of over 15,000 pounds of milk and over 750 pounds of butter in a year.



Heathflower 1st of Barcheskie, 21701; Grand Champion at Seattle, 1909.  
(Comp. Ayrshire Breeders' Association.)

## How a Cow Was Handled and Fed to Produce 1000 Pounds of Fat in One Year

By W. J. Gillett, Rosendale, Wis.

I have been asked to tell the story of how a cow was made to produce 1000 pounds of fat in 365 days, my subject, then necessarily, must be "Colantha, 4th's Johanna," of whom, I am pleased to say, I am the present owner and of whom I was the breeder. In connection with this story it might be of interest to go back into some of the details of her breeding, as well as some of her early history. When I go back into the pedigree of this wonderful animal it will be noticed that she has a right by inheritance to be a great producer.

She was sired by Sir Johanna, whose dam and grand-dam were also of rare breeding. The ancestry back of this sire were all, as I remember them, very large, strong, vigorous cows, showing excellent constitution and great capacity. The dam of the sire of Colantha 4th's Johanna was Johanna Rue. She was also a magnificent cow, as her record will show, producing 704 pounds of fat in one year.

Going back another generation we have Johanna 5th, who was the dam of Johanna Rue; as a four-year-old she

produced over 16,000 pounds of milk in one year. Back another generation, we have the cow Johanna, imported by Garrett S. Miller, of New York, with the record of being the best cow produced in Friesland at that time.

On the side of the dam, the first generation is Colantha 4th, who was also a large, vigorous, strong cow of the prevailing type of the Johanna family. As a two-year-old she made the wonderful record of 12,000 pounds of milk in one year, as a three-year-old 13,000 pounds, as a four-year-old 15,000 and 577 pounds of fat. Back another generation, we have the imported cow, Colantha, who, I believe, was as fine a specimen of a cow as I ever set eyes on. To justify this opinion, I want to say that when a boy and with limited means, I paid the sum of \$700 for the imported cow, Colantha, and ran in debt for my share of the half-interest. This cow was selected and bought for the express purpose of mingling the blood of this beautiful cow with the blood of Johanna. The combination has produced for us, without a single exception, cows of phenomenal dairy qualities.

Colantha 4th's Johanna as a calf showed exceptional vigor and growth. She was always of a beautiful type and is today. When asking the venerable Hoxby his criticism of Colantha 4th's Johanna, he replied, "I see no place where I could criticize except in one point—I would make her teats just a trifle longer." Her udder is so large that the teats are not in comparison and look smaller than they are. However, they are of convenient size. I have milked her all her life and would not have them any larger.

She showed wonderful constitutional vigor from the time she was born. Freshening at the age of two years, she produced 12,400 pounds of milk in 365

days and 400 pounds of fat. As a three-year-old she produced 15,000 pounds of milk with no record of the fat. As a four-year-old she produced 19,000 pounds of milk and 700 pounds of fat. Now in this connection I want to say that at the age of four years Colantha 4th's Johanna freshened in June on luxuriant June pastures. At that time she showed such phenomenal development, we decided to take the chance of her freshening in the summer season. She was barren for two years for this reason. This is why as many of you know, that Colantha 4th's Johanna did not produce a calf for three years.

I sometimes shudder now as I look back and think of how close she came to being sent to the shambles. I decided to try her once more, and as a result produced the champion cow of the world. Since that wonderful record, we have had two misfortunes, I am sorry to say. I should be delighted if I could once more take her over the ground for 365 days. I believe yet that great possibilities are in the future. At the age of eight years she freshened in the best possible condition. While I have seen it in print that she was dry for a long time, it is false. She had in fact milked incessantly during the whole three years between her freshening periods. Indeed, we had a very hard time to dry her off before freshening at the time she started her great test. As I said, she started the work under the most favorable conditions with one exception. About two weeks prior to this she had the misfortune to fall through the stable floor and break one leg. She was obliged to do much of her feeding lying down. Otherwise she started in the most favorable manner.

Only a few days after freshening we started feeding 8 pounds of grain per



day, gradually increasing it until she was getting 22 pounds per day; it was increased very gradually, however, and the indications that led to the increase of grain were carefully watched, the increase of course given as she seemed to respond at the pail. When she was tripping along at something over 30 pound gait, I reported the same to Mr. Gardner and called his attention to the amount of grain that she was eating—between 13 and 16 pounds per day. He sent back the reply, "You are starving

covered a period of 65 days, milked four times per day, it meant for your humble servant 65 days of watchful care and little sleep. I have caught up with the sleep, however, and am feeling pretty good over the result of the stunt. Her ration consisted of one-third gluten, one-third ground oats, one-third wheat bran and two to three pounds of old process oil meal every day. We used the Cedar Rapids gluten feeds because I consider them the best gluten feeds that we have, as it contains 24 to



Colantha 4th's Johanna, Champion Holstein Cow of the World. Record for One Year: Milk, 27,432 Pounds; Average Test, 3.64 Per Cent.; Fat, 998.26 Pounds.

your cow." Assuming that being on the ground I could judge as well as Mr. Gardner at long range, we did not increase very rapidly, and the maximum production was not reached until six weeks of the lactation period had passed. We had increased the amount of grain to 22 pounds. At one time we increased it to 24 pounds, but she fell off in her flow of milk and the amount of fat, but on going back to the old ration, she went back to the usual amount.

Colantha 4th's Johanna's first period of testing, in which there was a supervisor from the agricultural college,

26 per cent. protein. The roughage in her ration consisted of all the clover hay that she would eat, 30 pounds of sugar beets and 30 to 32 pounds of corn silage. This was continued up to the end of the first 65 days' test.

In this connection I want to say that during the period of the first 65 days' test our sugar beets gave out and I was forced to resort, for a few days, to another variety, and she dropped off on her milk as much as 10 pounds per day and seemed to show no disposition for recovering the usual amount. It is needless to say that we were not long in

finding more sugar beets, when she got back on to her track and went on. I cannot say too much for the sugar beet or the common red table beet, but I cannot see that the use of mangel-wurzel is of any possible help in the production of milk or butter fat.

Colantha 4th's Johanna was turned on to grass about the 15th of May and this was the only time that she had been out of the barn except to be shown to visitors. It is needless to say that for a few days she dropped off on her yield, but soon recovered after becoming accustomed to the change in feed and also the change in environment. While on pasture she was fed a grain ration of 12 pounds per day, the gluten feed being substituted with corn meal, the other elements of feed remaining the same. This was done because, in my judgment, I wanted to conserve as much of the tissue as possible for the trying months of July, August and September, which as all dairymen know are the most trying months in the whole year for the dairyman and his cow, on account of the hot weather and also the tortures that come from the flies and mosquitoes. I also changed the ration and added more carbohydrates in order to conserve the tissue. I also fed a small quantity of corn silage, of which she consumed from ten to twelve pounds per day.

Colantha 4th's Johanna was not in the least hampered with, nor babied in any way. She was not housed any time during the day except at milking time. She was not protected from thunderstorms. As I look back over this work, I can see many places where I believe that I could have made her produce much more butter fat. During that summer we had extremely hot weather. Every fly seemed to love to feast on the blood of the coming champion of the

world. We did not have facilities, such as electric fans, etc., to keep her cool as some cows have had.

As soon as the ensilage was siloed in the fall, she was put on to practically the same ration that we started her with during the first 65 days' test—the same grain ration and the same kinds of roughage. She was practically put back on to the same ration except that the quantity of grain given did not exceed 18 pounds per day. It is amazing to know that after this hot weather, she closed her record in giving 65 pounds of milk and 2.4 pounds of butter fat per day. During the hot trying days of August, she dropped to 2 pounds of fat and 50 pounds of milk per day, so that I am satisfied that if we could have helped these things she would have had more to her credit than she has at the present time. She would pant and seem distressed by the heat.

Now, when we come to consider that one cow produced 27,432 pounds of milk in 365 days, which is an average of 75.4 pounds per day, and that she produced 998.26 pounds of fat in 365 days, which is an average of 2.75 pounds per day, an equivalent of nearly 3½ pounds of butter, 80 per cent. fat, it is simply astounding. However, I believe that the top has not yet been reached and if some other man cannot do it, I have faith in my ability to produce a cow that will excel Colantha 4th's Johanna.

Colantha 4th's Johanna in disposition is highly intelligent. She is large, weighing under normal conditions about 1600 pounds. However, she has that refinement of the highest type, which in my experience is conducive to economical production of milk and butter. Her disposition is very good, indeed. She has a high nervous temperament. When treated as a cow should be treated, she is all right, but she will not stand for

any abuse. Perhaps some of the credit of this wonderful record lies in the fact of the extremely good condition in which Colantha 4th's Johanna freshened. I am a believer in the fact that

there is a certain energy tied up in the cow before freshening and that by the use of certain feeds there is an accumulation of body fats that the cow demands in the period of lactation to follow.

## National Dairy Show

The fifth National Dairy Show was held at Chicago in the Coliseum, October 20th to 20th. It was a big success and worthy of a very great and fast-growing industry.

Early in the program, on Friday, October 21st, was held the "National Dairy Cattle Judging Contest." This competitive trial of skill in placing dairy cows and bulls had been widely advertised, and was participated in by teams representing leading agricultural states. Those who took part were teams from New York, Ohio, Missouri, Kentucky, New Hampshire, Nebraska, Iowa and Minnesota. The four main dairy breeds: Jerseys, Holsteins, Guernseys and Ayrshires, were used, each student being required to place and write reasons on, a ring of cows from each breed and a ring of bulls from each breed except Ayrshires.

Handsome silver trophy cups were offered for the team standing first in Jerseys, Holsteins, and Guernseys by the respective breed clubs. New York won the Jersey and Guernsey cups and sweepstakes, and Ohio won the Holstein cup. Professor C. S. Plumb, head of the Animal Husbandry Department, had charge of the team, which was composed of Thomas Rouse, Abraham Williams and Clark Wheeler.

The contest over, attention centered on the exhibits of dairy machinery, and the cattle. While the former attracted Chicago people and novices, it cannot be doubted for a moment that the latter

held the attention of the critical and experienced visitors.

The cattle were a fine lot. Of the Jerseys, there were about a hundred, gathered together by the following well-known exhibitors: C. I. Hudson of New York, Dixon & Bruins of Wisconsin, W. R. Spann & Sons of Kentucky, John F. Boyd of Indiana, and "Sheffield Farm" of Glendale, Ohio. In these herds were several famous animals, prize winners on the island as well as in this country. C. I. Hudson showed Raleigh's Fairy Boy, who was a first prize yearling on the island, sold at Cooper's for \$8200, and after numerous showings in this country, stands undefeated. Noble Peer, the sensational yearling, which W. R. Spann imported last spring, at this time closed a great season, having previously won junior champion at each of the eight fairs where shown.

The Holstein show was the largest that this breed has ever made. The cattle came chiefly from Colorado, Wisconsin, Iowa and Ohio. This state was well represented by E. L. Zehring of Germantown. R. B. Young, of Iowa, brought some choice young things. In fact, the whole exhibit in this breed was of very high character, the animals used in the judging contest being much the best that many of the students had seen.

The Guernseys were well represented and there were also entries of Ayrshires, Dutch Belted and Brown Swiss.





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### Editorial

Dairying has made wonderful progress in the last decade. It is gaining a deep and permanent foothold in this region and throughout the Middle West in general. Already interest in many regions has reached a high pitch and is still intensifying. This increasing interest plainly manifested itself in the fifth National Dairy Show, which has just been held. It was a grand success, although falling off in number somewhat, yet with an increase in quality.

According to the last year book of the Department of Agriculture, there are 21,720,000 milch cows in the United States, and these are estimated at \$702,-945,000. The magnitude of the industry can perhaps be best realized when it is considered that these cows produce yearly about \$1,000,000,000 worth of dairy products. With this enormous output the supply is not yet adequate. There is an ever increasing demand. Creameries are springing up where a few years ago they were undreamed of. Better prices are being paid for butter, cream, milk and cheese and breeders of dairy cattle are arousing popular interest in the cow as a source of food.

Underlying the whole movement of the expansion of dairying is a growing necessity for staple food products. Overproduction is permanently improbable, for these products are inseparable from our diet. The time seems to be far distant when there will cease to be an active demand.

The perpetuity of the country's greatness depends upon increasing the production of farm products from year to year. More and better dairy cows are needed in every agricultural section to aid the soil in feeding the people. Dairying under strict business methods, with pure-bred or high grade cows, is the coming necessity and is what pays substantial profits. When it is considered that the dairy cow is the foundation for soil improvement and farming prosperity, her importance is best understood. Is there any other branch of diversified agriculture so important to the progress of a community? For the maintenance of soil fertility, for the production of food products, and for a remunerative form of business, it stands out prominently in the world of industries.

The Ayrshire silver cup which the Ohio State University judging team won a year ago for the best work in judging Ayrshire cattle, has just been received, this being a gift from Mr. L. F. Heymann, of Wheeling, W. Va. This becomes the permanent property of the University.

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### ROBERT M. WILBER.

Robert Marshall Wilber was born at Marysville, Ohio, on May 16, 1886. There he attended the public schools, graduating from the high school with the class of 1905. In the fall of the same year he entered the College of Agriculture as a member of the class of 1909, but sickness compelled him to withdraw from the University in January of his Senior year. From that time his health gradually became worse until death ended his long period of suffering on November 2, 1910.

There was probably no man in his class who had more friends than Wilber. He did not seem to seek them, but his strong personality drew them to him. His was a life full of admiration and of promise. Bob is best remembered by his friends for his big-heartedness, kindness and courtesy to all he met. Early in his college course he became active in both class and University affairs, and for this reason was well known to the student body.

Robert was the only son of Mr. and Mrs. George M. Wilber, of Marysville, Ohio. He was a member of Alpha Zeta and Sigma Alpha Epsilon Fraternities, and of The Sphinx Society. Faculty, alumni and students alike mourn the loss of this young man. It may be truly said: His life is an inspiration to all young men—one worthy of emulation.

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### Educational Value of the Chicago Stock Show

This great Show will be held on the dates of November 26th, 27th, 28th, 29th, 30th and December 1st, 2d and 3d at the Union Stock Yards, Chicago. The entries are greater than ever before, the quality of the stock better, and the interest among farmers, breeders and feeders keener than at any previous time.

It may be interesting to state that the International Live Stock Exposition, from a comparatively small beginning, eleven years ago, has assumed such importance in the live stock world as to render its annual occurrence an absolute necessity, not only on account of its being the high court of appeal, the court of last resort to stockmen, but because it sets the stamp of approval upon those of our domesticated animals that are most in demand, and establishes a standard among stock that must be lived up to in order to realize for the breeder, feeder and farmer the highest price for his produce.

The day of the inferior animal, the slow feeder and the tardy money getter is passed, and in order to succeed and obtain the best results in the shortest possible time, stockmen must breed for the types set by this great international tribunal; follow its mandates, adhere to its principles, and abide by the findings of its judges, in order to breed that which is best, reaches maturity the quickest and realizes the highest price in the shortest time.

The ordinary observed has little idea of what this Exposition is, what it teaches and what it means. It must be seen to be appreciated, it must be studied to be understood.

No more pleasant time can be spent, no more practical lessons learned, and

(Continued on page 31.)



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## ALUMNI NOTES

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Henry Dillatash, '09, who was superintendent of the stock department at the Tri-State Fair, held at Memphis this year, has, with a partner from Illinois, taken up several sections of land in Crittenden county, Arkansas, and is there laying out a town in the midst of the woods.

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Lloyd M. Bloomfield, '91, has recently given his library of Experiment Station literature to the University. It is an extensive collection of bulletins by the Experiment Station and will be used to complete the sets in the University library.

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B. M. Hendrix, '09, who has been an assistant in the Agricultural Chemistry Department, has gone to Washington, D. C., where he has a position in the Bureau of Chemistry, Department of Agriculture.

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Opal Tillman, '06, who for the past year has been with the United States Department of Agriculture, has been given charge of the seed inspection work for the North Carolina State Board of Agriculture.

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E. J. Hoddy, '09, has resigned his position as entomologist in the U. S. Department of Agriculture at a California station to take up the management of his farm, south of Columbus.

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George A. Crabb, '07, assistant in soils at Cornell University, has accepted a position as scientist in the United States Bureau of Soils.

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A. F. Shire, '10, who formerly held a fellowship in Zoology at Ohio State, has received an appointment from the United States Bureau of Fisheries at its Minnesota branch.

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Harry Evans, '09, has become a member of the force of instructors in the Department of Animal Husbandry, being engaged in the agricultural extension work.

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J. F. Zimmer, '08, has recovered from a severe attack of typhoid fever and has returned to his position in the Bureau of Entomology in Washington.

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J. C. White, '05-'07, is located at Marysville, Ohio, where he is in charge of the Y. M. C. A. agricultural work in Union county.

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O. W. Reagin, '10, has a position as instructor in the Animal Husbandry Department at the Texas Agricultural College.

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Porter Elliot, '06, and Orville M. Johnson, '08, are doing work in soil fertility in the Extension Department.

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T. H. Parks, '09, has been in the Bureau of Entomology at Washington for the past year and a half.

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Elizabeth Jefferson, '09, has a position with the Agricultural Extension Department.

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E. L. Wheeler, '04, is at Hastings, Indiana, with the "Farmers' Guide."





# NEWS NOTES


**DAIRY RANKS HIGH.**

At the National Dairy Show which was held at Chicago, samples of milk from the Ohio State University dairy won third place in a contest in which there were 300 dairies represented. The total score for the milk was 94 out of a possible 100 and only two points below the first prize milk. The bacterial count was only 500. This is exceedingly good and shows the kind of work being done at our dairy.

The stock judging team which will represent the Agricultural College at the International Live Stock Exposition is composed of O. H. Pollock, T. A. Rouse, W. E. McCoy, P. V. Ewing and C. R. George.

During the period from August 12th to October 13th, 1910, records for 147 cows have been accepted for entry in the Holstein-Friesian Advanced Register, eleven of which were begun not less than eight months after the freshening of the cows making them, and 27 of which were semi-official yearly or lactation records. Of the 109 records, four were extended to 14 days, and two to 30 days. This herd of 109 animals, of which two-thirds were heifers with first or second calves, produced in seven consecutive days 39,398.2 lbs. of milk, containing 1341.235 lbs. of butter fat; showing an average of 3.40 per cent. fat. The average production for each animal was 361.5 lbs. of milk, containing 12.305 lbs. of butter fat; equivalent to 51.6 lbs. or over 25 quarts of milk per day and over 14.3 lbs. of the best commercial butter per week.

**JUDGING TEAM WIN CUP.**

At the National Dairy Show, which was held at Chicago, October 20 to 20, the Agricultural College was represented by a student judging team composed of T. A. Rouse, C. S. Wheeler and E. O. Williams. The team stood first in judging Holstein-Friesians and won a large silver trophy offered by the Association. They also ranked fourth in all breeds. This was a very creditable showing and the team should be commended for their good work.

On Friday evening, November 18th, from 8 to 10, the Department of Animal Husbandry are to give an exhibit of live stock to the Agricultural students and faculty and others interested. One special purpose of the exhibit is to show the stock that will be exhibited at the International Live Stock Exposition.

The New York State Dairymen's Association and the New York Butter and Cheesemakers' Association will hold their annual convention jointly at Ogdensburg, N. Y., December 13th, 14th and 15th.

The Franklin County Corn Improvement Association of Canal Winchester held a meeting at the University on October 22, for the purpose of inspecting some work done in connection with the Agronomy Department, which has conducted a variety test plot, covering 20 varieties of corn. The following week Prof. McCall attended a field meeting of the association at Canal Winchester, where a duplicate of the test was carried on.

**HORTICULTURAL SOCIETY.**

The Horticultural Society held its regular October meeting Thursday, October 27. Mr. N. E. Shaw, State Nursery and Orchard Inspector, gave the society an interesting and instructive talk on Horticultural conditions in Ohio, especially in regard to the apple and peach crop.

The apple show, at which nearly ninety varieties were displayed, was an interesting feature of the program. Some Massachusetts and New York as well as Ohio fruit was shown.

The society meets regularly on the fourth Thursday evening of each month at seven o'clock.

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Wm. F. Bruce has been judging a number of the county and local corn shows in this vicinity.

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The Horticultural Department has received three calls in the last ten days for graduates to fill important positions.

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On November 1st the registration in the Agricultural College reached a total of 665, distributed as follows: Four-year course in Agriculture, 449; Domestic Science, 185; two-year Agriculture, 98; Forestry, 56; Special, 32; four-year Horticulture, 21; two-year Horticulture, nine.

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Professors Erf, Plumb, Clevenger and Cunningham attended the Fifth National Dairy Show at Chicago. Professor Erf gave an address before the entire assembly on the subject, "What Can the Agricultural College Do to Assist Farmers in Building Sanitary Barns and Buildings?" He also gave several addresses before different dairymen's association meetings which were being held during the Show.

**FORESTRY SOCIETY.**

The regular meeting of the Forestry Club was held Tuesday evening, November 1st, at the usual place in the Horticultural Building. Professors Lazenby and Goetz delivered two very earnest and timely addresses on the opportunities of forestry at the present time, and the necessity for a thorough preparation. Forestry offers a very attractive field for those that have a liking for nature and the great outdoors.

After the short business session, those present were treated to refreshments in fitness with the occasion, viz: pumpkin pie, doughnuts and sweet cider. The next meeting will be held December 6.

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Mr. L. W. Montgomery, who was student assistant in the Horticultural Department last year, and who received his master's degree last June, has been made an assistant instructor in Horticulture this year. He came here from the Oklahoma Agricultural College, where he was an assistant in Horticulture and Botany.

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At the National Dairy Show, the dairy cattle team representing the Ohio State University won the large silver trophy offered by the Holstein-Friesian Association of America, for the best work in judging Holstein-Friesian cattle. There were seven college teams in competition, composed of three men each, and Ohio State had first place, with 933 $\frac{1}{3}$  points out of a possible 1200. The colleges competing were: Ohio State, Iowa, Nebraska, New York, Missouri, Kentucky and New Hampshire. New York won both the Guernsey trophies, and Missouri made the highest record with Ayrshires, although no trophy was offered for the latter breed.

The Department of Horticulture received a letter of inquiry a short time ago from the U. S. Department of Agriculture, desiring information concerning young men trained in Olericulture or Vegetable Gardening. The letter states that there has been considerable demand for men trained in this particular line of Horticulture.

Another letter from Director Thorn, of the Experiment Station, indicates that the outlook for students preparing for work in Horticulture, either in scientific or in practical work, has never been brighter.

Prof. A. G. McCall, head of the Department of Agronomy, went to Washington, D. C., November 7th, for a stay of a week. While in the capital he attended the session of the National Association of Agronomists and met with members of the Department of Agriculture in his capacity as crop reporter for Ohio.

### Chicago Stock Show

(Continued from Page 27.)

no more valuable knowledge gained, than by attending the eight days devoted to this Show. The stockman will gain more real, sound, solid and serviceable information by attending this Exposition than he can gain in ten times the period at any other institution. At this Show he sees the best of every breed, his field for comparison is immense, and his opportunities for practical instruction almost limitless. By attending this Show, he combines business with pleasure, knowledge with practice, and education with example. It is the school of rapid learning for the stockman, a free education that remains in his head, and carries with it the methods whereby the best live stock is produced and the most money made.

### STUDENTS TAKE TRIP.

The class in advanced stock judging, under the direction of Professor Marshall, and the class in rural economics under Professor Price, made their annual trip to Green county on Friday, October 28. At Cedarville carriages were waiting to convey us from the depot to D. Bradfute & Son's farm. While the animal husbandry class were judging a number of rings of Angus cattle and admiring some of their prize winners, the rural economics class made a general survey of the farm. We returned to Cedarville in time for dinner, after which we drove to the farm of Mr. Watt. After the animal husbandry class was started to work upon rings of Southdown sheep and Duroc-Jersey hogs, Mr. Watt showed the rural economics class over his farm and discussed his method of farming.

Leaving the animal husbandry class at Mr. Watt's, the rural economics class drove to Xenia, stopping on the way at the farm of the Doffins Bros., where we observed a most excellent corn crop and Merino sheep. In Xenia a warm fire was appreciated by the party, especially Prof. Price and three others who made the trip through a snow storm in an open carriage. After supper we left Xenia for Springfield, where we stayed all night. The next morning we made a visit to the well improved farm of Mr. Foos at Fooseland, located about ten miles southeast of Springfield. From here we took a special car to Springfield to meet a train for Mechanicsburg, where we found waiting for us at the homes of the Wing Bros. a most excellent chicken dinner, which was thoroughly enjoyed by the hungry boys. After dinner Mr. Willis Wing hastily showed us about the buildings and farm, before we toured over the country in six automobiles which were provided for



the occasion and we visited a number of well managed farms.

The animal husbandry class left Mr. Watt's farm late in the afternoon for Cedarville to get a train for Xenia, where we spent the night. Eager for the day's work, we arose early and at seven o'clock were on our way for the homes of Messrs. J. W. Cherry and J. C. Williamson, where we had the opportunity of seeing some very fine sheep. In the afternoon we visited the farm of Mr. Arch Greaves, where we judged Polin-China hogs and Cheviot sheep.

We returned Saturday evening, satisfied that our time and money had been well spent. We were favorably impressed by the opportunities for success offered by the well managed farms. We will always remember with appreciation the hospitality and kindnesses shown us at the places which we visited.

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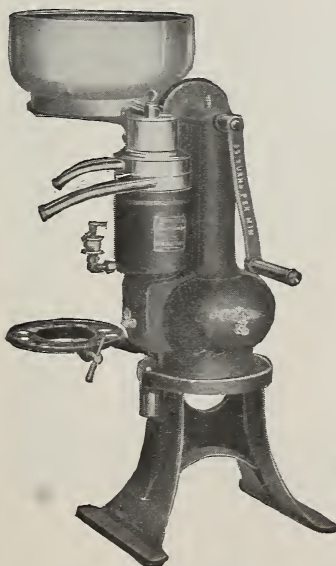
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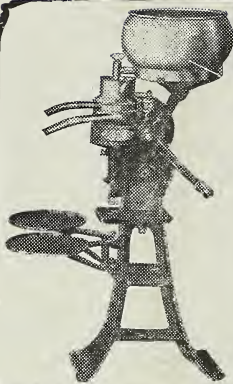
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